

REMARKS

The Office Action mailed November 5, 2004 has been reviewed and carefully considered. Applicant appreciates the telephone interview granted to Susan Paik by the Examiner on January 5, 2005 regarding proposed claim amendments to distinguish over the cited art. Based on the interview, the Applicant has amended independent claims 1, 12 and 22 to incorporate the features of claims 5, 15 and 24, respectively, to further distinguish the present invention from the cited references.

Claims 1-4, 6-14, 16-23 and 25-32 are pending in the present application. Claims 1, 12 and 22 have been amended. Claims 5, 15 and 24 have been cancelled without prejudice. No new matter has been added by the amendments. Reconsideration of the objections and rejections set forth therein is respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0161718 to Coley et al. (hereinafter Coley) in view of U.S. Patent No. 6,334,118 to Benson (hereinafter Benson). Applicant respectfully disagrees.

Applicant notes the Examiner's citing of Benson as teaching 'an inventive concept to request the user information including an amount of time request by the user for using the time based software.' However, as per the telephone interview of January 5, 2005, the Applicant has amended the independent claims which now further distinguish over both Coley and Benson. That is, the independent claims 1 and 12 have each been amended to recite the features of claims 5 and 15 respectively; namely, to include the following:

"... wherein if the user uses the time-based software for less than the amount of time approved, the user crediting any remaining amount of time back to the authentication server."

Claim 22 has been amended to recite the features of claim 24; namely, to include the following:

"... wherein if the user uses the time-based software for less than the amount of time approved, any remaining amount of time is credited back to the authentication server by the user."

Applicant notes that claims 1, 12 and 22 have also been amended to specify that it is the user who proactively credits back unused time to the authentication server.

Paragraphs 0049 and 0050 in Coley have been cited by the Examiner in item 7 of the Office Action mailed May 18, 2004 and item 8 of the Final Office Action mailed November 5, 2004 as teaching the features of claims 5, 15 and 24. Applicant respectfully disagrees.

- Paragraph 0049 discusses wherein a client module 108 may start a timer for periodic checking of license validity. Such a validity check is automatically initiated when the timer expires (step 234). However, please note that automatically checking at predetermined time intervals whether a license is valid not only fails to disclose but **fails even to relate to** wherein a user credits back remaining unused time to the authentication server, as presently claimed.
- Paragraph 0050 simply goes on to discuss wherein during the periodic checks, a license ID is used to access a database record corresponding to the license. Appropriate action (enabling/disabling the software) is taken by the system according to whether or not a license record is found.

Automated license checking as taught by Coley is simply for the purposes of policing whether software is being legitimately used and enabling/disabling the software accordingly. There is no teaching in Coley of an interactive time-based software activation system as in the present invention. Indeed, Coley fails to teach wherein the user credits back remaining unused time to the authentication server, essentially as claimed in claims 1, 12 and 24.

In fact, Coley's feature of determining whether or not software is being legitimately used is a moot issue with regards to at least this claimed feature of the present invention, since any usage time that a user decides to credit back to the authentication server is necessarily "legitimate" time which has *already* been approved. That is, the user is allowed use of the software for "an amount of time approved" (*see* claims 1, 12 and 24) and "if the user uses the time-based software for less than the amount of time approved, the user crediting any remaining amount of time back to the authentication server."

Benson was cited as teaching an inventive concept to request the user information including an amount of time requested by the user for using the time-based software. However, the Applicant has reviewed Benson in light of the presently amended claims and notes the following:

- Benson takes the known concept of asymmetric cryptography and focuses on improving its application in secure software rental systems. Benson relies on the comparison of rental thresholds with audit trails to either validate or invalidate software rental. Audit trails are created by the rental server; the rental server relies on a smart card for security (the smart card performs asymmetric cryptography and holds the customer's private keying material) and synchronizes access to the smart card and the audit trail. The rented application periodically examines the audit trail for validity; if it's valid, the application analyzes the audit trail and compares it to the key file (which contains e.g., the rental threshold).
- In Benson, the rented program has no access to the customer's private keying material. Using asymmetric cryptography, the customer's response means proves to the rented application that the rental server has access to the customer's private keying material. The rented application does not permit service to the customer until the proof is successful.

- Benson goes on to state that the "rental server 107 cannot execute in a manner that thwarts system security, i.e., the rented applications **do not trust** the rental server 107." (emphasis added) *See* Col. 9, lines 8-11. Please note: it is readily apparent that this is entirely contrary to and in actuality teaches away from the present invention, which explicitly expects the software to "trust" the authentication server entirely. That is, in the present invention, the software is activated *solely* upon the authentication server determining that a user is approved.
- Most importantly, Benson **fails to disclose or suggest wherein a user credits back any unused approved time to the authentication server**, as presently claimed. Unlike Benson, the present invention allows the user to proactively and interactively decide whether or not to re-deposit any remaining unused time. Advantageously, this permits the user to maintain his/her own record, which facilitates, e.g., a redundancy check of accounting information rather than relying solely on the accuracy of the server, an audit trail or other backup media.

In both Benson and the present invention, some sort of 'accounting information' is desirable. In Benson, accounting information is derived from maintaining audit trails. The audit trail relies on the software in Benson performing an "active push" in a regular time period to the rental server (*see* Column 6, lines 54-67). In this "active push" mechanism, the software needs to maintain a communication channel (e.g., be "online") with the rental server at all times.

Contrast this with the present invention: where the software usage relies, e.g., on an "advance withdraw," wherein if the amount of time withdrawn is not completely consumed, the software can send a request to the authentication server for proper credit into the corresponding account. In this "advance withdraw" scenario, the user proactively requests a "credit back" mechanism, and only during the "advance withdraw" and "credit back" requests does the software need to maintain a communication channel with the authentication server.

Moreover, the Applicant notes that the approach for deriving accounting information in the present invention is based on, e.g., a real-time calculation of "start time" and "current time" to calculate the elapsed time of software usage, rather than assessing multiple records of audit trails as in Benson. Advantageously, since such elapsed time calculation of the present invention is preferably implemented, e.g., as part of the time-based software, it will be resistant to tampering. It will not be possible to tamper with it unless an attacker tracks the very source code of the software and modifies it.

Yet another distinct advantage is that in the present invention, the real-time calculation of "start time" and "current time" to calculate the elapsed time of software usage is not concerned with nor is reliant on whether the system clock is set correctly all the time.

For example, in Benson if the system clock is reset due to, e.g., a system crash or a power outage, and if the reset is not synchronized with the actual date/time before assessing multiple records of audit trails, this will result in an inaccurate calculation of the amount of time of software usage. Here is an example how Benson's approach could go wrong:

<u>Audit trail</u>	<u>Actual date/time</u>	<u>System date/time</u>	<u>Session info</u>
1	Dec 31 1999 23:30	Dec 31 1999 23:30	Start
2	Dec 31 1999 23:45	Dec 31 1999 23:45	Alive
3	Midnight	System reset	-- Alive --
4	Jan 1 2000 00:15	Jan 1 2000 00:14	Stop

According to the above example, the actual amount of usage should result in a total of 45 minutes. But consider if the server side performs a system reset at midnight or is replaced for maintenance, and the system clock is then set one minute off from the actual date/time; the amount of usage as recorded according to Benson's teaching will only be 44 minutes instead.

In the present invention, this scenario will never happen, since the amount of time for usage is withdrawn in advance. A system reset on the server side will preserve the integrity of the accounting information.

If a system reset scenario, e.g., as described above occurs on the client side, the software could not be in service anyway; in all cases (whether in Benson, Coley or this present invention), the accounting information would be disrupted. However, in the present invention, the only disruption that might be caused on the client side may be the inability to credit back remaining unused time. In Benson's case, the disruption would be much worse: it will be flagged for an integrity problem, which in turn would render the accounting information untrustworthy because the audit trail records may not match with that on the client side. This potentially could cause a complete denial of service.

Accordingly, claims 1, 12 and 22 are believed to be patentable and nonobvious over Coley in view of Benson for at least the reasons stated above. Claims 5, 15 and 24 have been cancelled. Claims 2-4, 6-11 and 30, 13-14, 16-21 and 31, and 23, 25-29, 32 depend either directly or indirectly on claims 1, 12 and 22, respectively, and as such, the dependent claims are believed to be patentable and nonobvious for at least the reasons given above for claims 1, 12 and 22.

Finally, Applicant notes that no new issues have been raised by the current amendments, since all claims (e.g., claims 5, 15 and 24) were already previously considered.

For at least all of the above reasons, withdrawal of the rejection under 35 U.S.C. §103(a) and allowance of pending claims 1-4, 6-14, 16-23 and 25-32 on the merits is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1-4, 6-14, 16-23 and 25-32 are patentable and nonobvious over the cited references. Consequently, the Applicant respectfully requests reconsideration and withdrawal of the rejection and allowance of the application. Such early and favorable action by the Examiner is earnestly solicited.

Should the Examiner believe that a telephone interview may facilitate resolution of any remaining matters, the Examiner is encouraged to contact the Applicant's undersigned attorney.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 50-1433.

Respectfully submitted,
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